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**Concept paper supporting the introduction of a surgical cotton industry in Zimbabwe
producing surgical cotton, cotton balls and dental balls in Zimbabwe**

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The views expressed are those of the author and do not necessarily reflect the views of UNCTAD.



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Abstract

- ▶ Africa produces an abundance of cotton and most is exported.
- ▶ The traditional industries of spinning and fabric formation suffer competitive issues.
- ▶ Surprisingly, cotton by-products are nearly all imported into the region, yet
- ▶ they can be easily manufactured in any of the cotton growing countries.
- ▶ Lets explore manufacturing medical based cotton by-products to address problems related to women's health and affordability.

Identify the problem

- ▶ Can a cotton balls, and cotton tampon industry be viable in Zimbabwe and bring benefits to the cotton value chain?
- ▶ Why is the pricing of sanitary products is high, yet
- ▶ the biggest ingredient is cotton, which is relatively cheap in its raw material stage.

USD	China	USA	UK	South Africa	Zimbabwe
Tampon Price Range per unit	0.05-0.35	0.10-0.49	0.05-0.39	0.10-0.55	0.20-0.75
Cost Per Year (20 tampons on average per cycle)	12-84	24-117.60	12-93.60	24-132	48-180

Ownership and Management Structure

Proposed Ownership structure

- ▶ The ownership of this business should be private sector.

Reason for proposed structure

- ▶ This structure to be market led and needs to comply with medical standards in Zimbabwe and in the export markets.

PROJECT LOCATION – HARARE/MARONDERA



Why its viable?

- ▶ Low investment required - \$300,000.00
- ▶ Prices per unit are high @ 20c – 75c per unit
- ▶ Market is potentially exciting – 4 million women per year
- ▶ Demand potential is high - 10 tampons/cycle x 12 months x 4 million = 480m
- ▶ 480m tampons x 3 grams each = 1,440 tons of cotton lint input a year
- ▶ Sales are potentially exciting = 480m x \$0.20 = \$96m per year
- ▶ payback period is short – 3 to four years



CPC Pure Cotton Folds



Nurse Cotton Wool

Key initiatives and goals of the project

- ▶ Improve the welfare of cotton value chain through import substitution.
- ▶ Create affordable cotton by-products whilst addressing the hygiene requirements of women.
- ▶ Diversify and broaden the product lines possible with locally grown cotton and to serve upscale markets.
- ▶ A fourth objective is technology transfer and enhanced returns in the cotton value chain.

Milestones for year one and two

- ▶ To install a 500 ton a year cotton bleaching plant producing cotton balls and cotton tampons.
- ▶ To establish regional B2B and B2C markets for both cotton balls and cotton tampons.

COTTON BY-PRODUCTS PRODUCT MATRIX		
SURGICAL COTTON WOOL	SURGICAL COTTON BALLS	COTTON TAMPONS
300 TONS ANNUALLY	100 TONS ANNUALLY	200 TONS ANNUALLY

Marketing Opportunities

Product: 3005 Wadding, gauze, bandages and the like, e.g. dressings, adhesive plasters, poultices...

Unit : US Dollar thousand					
Importers	Imported value in 2014	Imported value in 2015	Imported value in 2016	Imported value in 2017	Imported value in 2018
World	7,744,137	7,229,872	7,559,356	7,778,349	8,183,671
United States of America	966,178	1,015,994	1,085,377	1,131,174	1,159,133
Germany	996,218	878,282	838,243	830,301	891,187
France	618,183	516,296	549,446	568,239	590,352
United Kingdom	437,427	413,370	442,506	465,353	473,756
Netherlands	283,705	313,262	417,914	454,840	445,272
Belgium	360,939	320,925	352,985	372,120	382,134
Mexico	207,652	233,280	229,748	240,778	259,453
Japan	223,224	211,805	231,849	228,110	234,652
China	121,017	140,876	149,898	181,175	228,513
Spain	243,918	186,905	193,934	200,907	218,243

Marketing Opportunities cont.d

- ▶ **Demand for surgical cotton products**
- ▶ The world imported USD 8.1 billion worth of cotton wool and related finished goods in 2018
<https://marketanalysis.intracen.org/TradeMap.aspx>
and this confirms a large market for some products.
- ▶ The biggest importer is USA with a demand of US\$1.1 billion annually.

Zimbabwe's surgical cotton requirements and supply side issues

- ▶ The average woman experiences 2,535 period days of her life, or 7 years out of 39 years (if 5 days per 28-day cycle).
- ▶ On average a woman requires 11,000 tampons or 15 sanitary pads per period or a grand total of 38,025 pads.
- ▶ Tampons in Zimbabwe currently costs about USD0.23 each and 10 sanitary pads cost \$1.24
- ▶ If 37.9% of Zimbabweans live in poverty, for most women, having a period is not affordable. Cotton by-products can assist to solve this problem.



PRODUCT	TARGET MARKET
SURGICAL COTTON WOOL	HOSPITALS, CLINICS, PHARMACIES, SUPERMARKETS
COTTON BALLS	HOSPITALS, DENTAL CLINICS,
COTTON TAMPONS	SUPERMARKETS, STORES

Opportunities

- ▶ Although there are a number of cotton bleaching businesses in the SADC region, most are equipped to produce cotton wool and not surgical cotton.

Quality of goods

- ▶ A number of competitive products are not absorbent and fail in medical use
- ▶ Regional production does not produce sterilized bleached cotton.
- ▶ The health sector is demanding sterile measurable cotton balls
- ▶ On average a sterile cotton ball weighs 1.2g, and a patient requires 2 balls per hospital or clinic visit.
- ▶ With a population of 17 million people and 1.3 million living with HIV, the average hospital visits come up to 22.6 million annually, using an estimated 54 tonnes of sterile cotton balls.



- ▶ **Bio-degradable disposables**

- ▶ Cotton by-products for medical and sanitary purposes are bio-degradable.
- ▶ Recent research show that synthetic tampons depositing short fibres in privates

- ▶ **Untapped market**

- ▶ There is opportunity to produce a cheaper cotton product for the average end users.

Threats

Threats at the retail level

Retailers loyalty to certain brands already in existence
Rural women (untapped market) may resist new cotton tampon product

Threats from competition

High barriers of entry for local product
High production costs
Poor quality and poor performance of product

Threats from potential clients

High barriers of exit from current suppliers for medical balls (long contracts of supply)

Other threats

Electricity availability
Raw materials expensive
Hi prices of cotton lint if at all available

Financials

The following are a financial model based on briquetting

Bleached Cotton Cost per Kilogram

Process Cost

	Cost per Kg
Power	0.12
Labour	0.08
Bleaching Chemicals	0.21
Boiler (Chemicals and Coal)	0.14
Bale Press Consumables	0.03
Total	0.58
Raw Material Cost	
Cotton Wool as per 'A' Index	2.05
Cost of Process Loss @ 5%	0.10
Transport Cost per kg	0.05
Total Cost of Cotton	2.20

Bleached Cotton Cost Ex-Works	2.778
Cost of Transport per kg	0.08
Cost of Rent per kg at 81000 kgs per month	1.91
Bleached Cotton Cost Landed to Customer	<u>4.77</u>
Cost of cotton balls per kg	<u>5.24</u>

Number of cotton balls/kg of bleached cotton (1.2g)	Number of tampons per kilogram of beached cotton 3 grams
834 cotton balls	333.33 tampons

In a kg of bleached cotton, 333.33 tampons can be produced, representing

Operations

- ▶ The operations are very simple once the raw materials are sourced and in place for processing. it is represented by the process flow below:



Conclusions

- ▶ The idea of creating cotton by-products is indeed a benefit to Zimbabwe in many ways. Benefits include a import substitution, transfer of technology and employment. The region saves on foreign currency for importing simple products. The health sector can benefit from using sterilized goods which can be secured from local suppliers whose production sites can be monitored and inspected.
- ▶ Thank you